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# USSR Report

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3 October 1984

USSR REPORT  
ENERGY

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## OIL AND GAS

### OIL PRODUCTION, EXPLORATION POORLY COORDINATED IN KOMI ASSR

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 12 Jul 84 p 2

[Article by V. Krukovskiy, SOTSIALISTICHESKAYA GAZETA correspondent in Ukhta: "Polar Oil"; passages rendered in all capital letters printed in boldface in source]

[Text] The majestic and deep Usa River, which cuts across the polar Urals from east to west, has become the natural southern boundary of a new oil-producing region in the northern Komi ASSR. Three-quarters of the republic's oil is produced here. It is one of the most important regions in the Timano-Pechorsk Industrial Complex. Along the right bank of the river near the Arctic Circle stands a large industrial site. It contains oil wells and drilling, construction and other enterprises. The Usa-Ukhta-Yaroslavl Pipeline begins here, where the young city of Usinsk is developing. Viewed from the air, the accomplishments of the geologists, construction workers and oil workers paint an impressive picture on the background of the endless wooded tundra. But, when one realizes that this large and complicated operation has up to now been based on two "whales"--the Usinskoye and the Vozeyetskoye oil fields, a feeling of alarm is unavoidable: the production peak of both these fields occurred two years ago. And, as is well known, the peak is the beginning of the descent. Specialists predict that the descent will be steep.

"It is now very obvious that the geologists were really stretching things when the oil field was put into production," said V. Timofeyev, the deputy chief of the process-engineering department of the Komineft' Association. "That's why the more than 40 exploratory wells drilled there, where the oil was supposed to be, were dry... A cluster of wells were drilled on the flank of the Vozeyetskoye Field right next to well No. 1,439, which produced only water. The process engineers tried unsuccessfully to convince the association's chief geologist, N. Lisin, that there was no point in drilling there. 'That's what the project calls for,' he said. Well No. 1,438 was drilled and turned out to be unproductive. That well cost about one million rubles."

The republic now produces over 20 million tons of oil and condensate--a significant addition to the nation's liquid fuel balance. New discoveries are possible. All of this has forced the RSFSR Ministry of Geology to concentrate considerable resources here. They have had to carefully and thoroughly

consider their exploration strategy. Back in 1980, the volume of deep exploratory drilling was raised to 500,000 meters per year. In actuality, it only barely surpassed 200,000 meters on the average for the Arkhangelsk and Ukhtinsk exploration associations.

This was how the exploration work increased in one of the most important and promising oil-producing areas. The limited deep-drilling capacity was spread out, year after year, over a vast area.

A significant part of the exploratory drilling was concentrated in remote areas, 300-350 km from operating oil wells. This was where about 10 oil fields were discovered. They contained limited quantities of very heavy, difficult-to-recover crudes. They probably could not be realistically put into production even in the 12th Five-Year Plan.

"The wide dispersion of limited exploration capabilities did a disservice to the matter at hand," said B. Vasserman, the director of the Timano-Pechorsk Department of the All-Union Scientific Research Institute of Oil Exploration, who is well-known in these parts. "Because of this, the crews skipped over many promising areas, to which they must now return, way behind schedule. An obvious example of this is the Khoreyverskaya Depression, particularly the southern part, which is adjacent to the Usa and the Vozey."

The structure of the exploration management is even more fractured and checkered. There are about 10 independent organizations in the area, each with its own mandate. They all have THEIR OWN subjects, THEIR OWN science, THEIR OWN system of processing and interpreting the data. Someone in a position to coordinate their activities is supposed to be directing their work so that the end result is achieved. After all, they are either directly subordinate to the RSFSR Ministry of Geology or to associations located in different oblasts. This has caused a situation that is called "working at cross-purposes."

A similar situation occurred in the geophysical work planning. Of the 44 field crews belonging to the Pechorgeofizika and the Sevzapgeologiya associations, over half were operating in areas very far from where the oil workers would be needing them next. Therefore, it is hard not to agree with the opinion of many specialists when they say that exploration personnel must first agree with the oil and gas workers on basic directions for exploratory work.

The Komineft' Association will need to bring new fields into production beginning in 1986 if production is to be maintained. But how will this be done? Those areas that are relatively close by and can be developed with presently operating equipment have not been explored or evaluated. Those areas that have been explored cannot at present be put into production.

"Who told you that the oil workers have nowhere to go?" said a surprised B. Nikitin, general director of the Ukhtaneftegazgeologiya Association. "How about Kharyaga? In August we will confirm the reserves there. They should have already begun putting it into production..."

The Kharyaginskaya Pool is indeed one of the promising areas. But the oil here is viscous when the temperature is between 9 and 30 degrees above zero. It also contains up to 42 percent paraffin. However, further to the east, on the same latitude as Usinsk and Vozey, the Sandiveyskoye, Boganskoye and Misyurshorskoye fields have been discovered. They contain light, high-grade crude. The first of these was discovered back in 1981. But in three years, little has been done to evaluate the field. A total of 10 wells have been or are being drilled. Even less is being done at the other fields.

"We hope to give a production evaluation of the Boganskoye Field by 1986," said B. Nikitin. "We will need to drill at least 100,000 meters of wells to do that."

Thus, the only field that can be put into production in the near future is the Kharyaga. But difficult technical and process problems will be encountered here. The field is a good 100 km north of Vozey--far beyond the Arctic Circle. Thanks to the geologists, the oil workers have to make a big jump north with tight deadlines, leaving behind other potential, but alas, unevaluated, fields.

The difficulties and problems will increase a hundred-fold. After all, not only do they have to build 100 km of roads, but also power lines and pipelines. They need special drilling techniques and technologies, special equipment and special construction methods. From 2.5 to 3 million tons of freight alone will have to be hauled into the wilderness. This will require the full capacity of the Pechora Shipping Company. The shippers must already start dredging and other operations on the tundra rivers to prepare them for the massive seasonal freight shipments.

"It's not one of the simplest tasks," said Anatoly Stepanovich Gumenyuk, general director of the Komineft' Association. "About 350-400 million rubles must be invested over a short period to put the resources of the Kolvinskiy Arch into production. The money must not just be invested, but must produce results. In my opinion, there is no other way to avoid a drop in fuel production in the region..."

Specialists and scientists unanimously agree that time must not be wasted. They must quickly begin working on the road, power line and the workers' settlement projects.

There are, as they say, other options. Couldn't the exploration workers stop searching along the oblast borders and concentrate their efforts and resources on a quick evaluation of areas that could begin producing tomorrow? I have foremost in mind the southern part of the Koreyverskaya Depression and the Shapkinsko-Yuryakhinskiy Arch. Then other possible areas could be opened up, while the Far North could be developed without haste, with the proper preparations. This is something that the specialists of USSR Gosplan and the ministries involved could think about.

The oil workers must themselves do at least something to alleviate the problem. The old fields in the Izemskiy Rayon must be more intensively worked. There are still fuel-production reserves at Yarega and Zapadnyy Tebuk and the heavy crude deposits at Usa. Rather than falling, oil production in the 12th Five-Year Plan might increase in the European North. But, to do this, action must be taken without delay.

## OIL AND GAS

### RED TAPE CAUSES TURKMEN CONSTRUCTION DELAYS

Ashkhabad TURKMENSKAYA ISKRA in Russian 27 Jun 84 p 4

[Article by N. Sosnina: "Paper Snowstorm"]

[Text] Mergen Bayramov spends the days working and bustling around the site of a geological base being built near Anau. He has a melon field where the production buildings are supposed to be. Alfalfa is ripening on the site of the administration building. The alfalfa has greatly improved the feed quality for the sheep grazing nearby. "Everything can be put to some kind of use," figures the resourceful watchman, not without justification.

No, the Turkmen geologists have nothing against watermelons. Nor do they object to alfalfa, as long as it grows where it is supposed to. But fields and gardens shouldn't be on a site designated for the production of precast reinforced concrete!

We must admit that we were surprised to find a plantation where construction was supposed to be humming along. One could grow trees on the site of the geological base in Bayram-Ali, not just watermelons: it's been that long--12 years--since the Turkmenneftegazstroy Association began working on the base. And, if you remember that this same contractor has for 5 years intended to, but just can never get around to, building even 10,000 of the 14,000 square meters of housing for the TuSSR Geology Administration, then the alfalfa seems like a trifle.

Red tape is a subtle, complicated thing. We will present an introduction for those who want to gain some experience in this science. For instance, what do you do if you are assigned projects that you don't want to build? Don't argue about it. Instead, agree and sign the protocol. Next, discuss the projection estimation documentation with the unsuspecting client and approve it. When it comes time to prepare the project lists for the next year, show the maximum firmness and either don't include the project in the list or, as a smoke screen, plan on a miserly volume of construction and installation work. There is a measure of risk, of course, that someone will remember the agreements that were made and check to see whether they were fulfilled. But who doesn't take chances in this day and age?..

In other words, take the chance and remember: you do not need to put the amounts agreed upon in the plan into production immediately. It is very

convenient to transfer the problems to the client and put a good portion of your worries on his shoulders. At the last moment, start reviewing the project designs. The fact that you have previously initialled them should not disturb you. Look the exasperated representative of the client in the eye and tell him: we don't have this or that material, give us some of yours. If they, contrary to expectation, agree, then you have won about three years--it's in your pocket now.

However, try not to allow discord or loafing to appear in your own ranks. Be organized, or else you may suffer an embarrassment similar to what happened to the gas construction workers on the reinforced-concrete plant in Anau. Having successfully tested all the above methods of stretching deadlines on the client (the TuSSR Geology Administration), the general contractor, Turkmenneftegazstroy, stumbled when revising the documentation. Seeing no way to obtain the materials specified therein, the association's staff started enthusiastically trying to convince the geologists of the advantages of gleaming steel structures and modular units instead of the primitive, but alas, scarce, precast reinforced concrete.

There's no telling where this might have ended, but... the manager of the Shatlykgazstroy Trust in Mary, I. A. Tsoy, was apparently not aware of the manipulations of his Ashkhabad management. With inexcusable naivete, he informed both the customer and the director of Turkmenneftegazstroy, A. D. Sviridov, that making changes in the project estimation documentation at this stage in the construction was undesirable and would cause "serious losses of material, capacity and time."

Thus, this move backfired badly. But it seems that the contractor learned from the mistake and changed course in midstream. All the more so because he received strong support in the republic's Ministry of Construction of Petroleum and Gas Industry Enterprises, which approved the actions of its Turkmen division. After all, for a number of years our recommendations have been accepted like clockwork.

Some time ago (in June 1980!), the republic's governing bodies approved a statute that provided, in particular, for a multifaceted solution to the production and social problems of the TuSSR Geology Administration. They took this action to strengthen the material and technical base for oil and gas exploration and evaluation. But after nearly five years, no one, except the poor geologists, has figured out that the contractor has simply deceived them. Turkmenneftegazstroy has included not seven, but two geological bases in its program, excluding housing. Thus, planning only to do one sixth of the volume of construction and installation specified in the document, they even dragged out that work for many years.

The management of the TuSSR Ministry of Construction also masterfully applied the methods of red tape. They just "did not notice" the statute of the above-named governing bodies. The ministry built nothing for the geologists.

What wonderful methods! However, life does not stand still--new leaders emerge. The history of the longsuffering geologists' settlement Berzengi is testament to this. The aforementioned statute provided for the complex construction of

this settlement. Without going too deep, let us return to 1979, when all the consequences of the settlement's chaotic growth suddenly appeared.

The Ashkhabad municipal services refused to remove the trash and at the same time skillfully reneged on building a sewer there. The power system started blacking out from the increasing loads. Water supply to homes was interrupted. Parents were upset: there was no school in a settlement of 4,500 people.

A stream of complaints gushed from Berzengi to the Geology Administration. The administration courageously answered these complaints and, straining themselves, looked for funds to build these vital projects in their settlement. However, you can't build things in the air--you need land. They turned to all the departments to find some of it.

Then the same Mrs. Red Tape appeared on stage, though in a different costume. This is why we had to present all the above introductions. If, for example, you don't want people to accuse you of idleness, then you should more actively create the illusion of being busy. Participate in all the proposed conferences and commissions. Draw up and submit as many solutions as possible, but don't forget to shove the work involved off on your neighbor. If you don't, you might have to do it yourself.

For example, the geologists needed an allotment of 0.004 (four thousandths) of a hectare of idle land from the Leningrad Kolkhoz in the Gyaurskiy Rayon for a support for their VL-35 kilovolt power line. A 10-member commission had to be formed to allot the land. It was headed by deputy chairman of the Gyaurskiy Rayispolkom. The former kolkhoz chairman, M. Orazov, participated. The power-line route was determined. Then, at a meeting of the ispolkoms of the rayon and oblast Councils of Peoples' Deputies, a decision was made: recommend that the kolkhoz allot the land.

All that remained was for the kolkhoz farmers to approve this at a meeting and for the Main Architectural Planning Administration [APU] of the Ashkhabad Gorispolkom to grant permission. However, no meeting was called: they were too busy. And, the chief engineer of the APU, V. N. Kotikova, hoping that the settlement was located "outside the city limits," sent the geologists to the rayispolkom. But, since the VL-35 kilovolt power line passed through the "boundaries of the general plan for the future growth of Ashkhabad," the rayispolkom kicked the requesters back to the Main APU.

A paper snowstorm howled around the speck of worthless land. It became a blizzard when the question of land for the school came up. Now, the geologists really got the runaround. Since the "boundaries" of Berzengi had never been precisely determined, the gorispolkom and oblispolkom both successfully dissociated themselves from the settlement, one citing the future boundaries, the other citing the existing boundaries of the city.

In short, search for objective reasons. If there are none, make them up yourself. And promise, promise, promise! Back in May 1979, A. R. Akhmedov, the chief architect of the republic capital, promised the geologists that the general plan, and then the detailed draft plan for Berzengi would be ready by

the end of the year. However, they obviously didn't hurry with the documentation. Only in early 1982 did TuSSR Gosstroy present Turkmengosproyekt with the task for developing the draft, after the settlement had developed chaotically for 25 years without a plan. Meanwhile, M. Krichevskiy, the former deputy chairman of Gosstroy, sent threatening messages to the geologists. This showed a total lack of coordination on the part of the committee and its subordinate institute. This was miraculously turned into an objective basis for forbidding the allotment of land and the building of a structure in Berzengi. Nothing can be built without the draft plan, which is not ready...

The project design appeared only in late 1983. And, it was so grandiose that the geologists gasped. But, alas, not from delight. The building plans had nothing in common with the reality of tiny Berzengi. It needed a school for 600, not for 1,076. They didn't need such a big House of Culture. The hope of building the settlement faster by using their own resources was dashed. After five years of exchanging letters and "walking on nails," the Geology Administration returned to its original position: no land, no water, no school. Everything had to be started all over again.

Thus, the advocates of paper snowstorms are clearly victorious. Thanks to their fine art, a statute that was never revoked nonetheless appears not to exist, although it was approved with the aim of improving the life of Soviet citizens and placing resource exploration in Turkmenistan on a firm foundation.

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CSO: 1822/405

## OIL AND GAS

### OIL STRIKE REPORTED IN DHZAFARLY FIELD

Baku VYSHKA in Russian 14 Jul 84 p 1

[Article by O. Nechipurenko: "A New Field Is Discovered!"]

[Excerpts] Well No. 1 at the Dzhafarly site struck a gusher at 4,020 meters. For several days, a steady flow of over 100 tons of "black gold" has been coming to the surface. We asked Ali Nazirovich Guseynov, the chief geologist of the Azneft' Production Association, to comment on this event.

"The well at Dzhafarly does not just signify the discovery of a new oil field," he said. "The drilling in this structure, which was studied by the highly precise gravimetric and seismic methods, confirmed the reliability of a new system of searching for oil and gas structures: predicting the geological section. We have already used this method on three wells. It permits us to reliably find the so-called anomalous pools. But this is the first time that it has produced such a big find. The reliability of the well construction will allow us to begin production without drilling a production well."

VYSHKA recently told its readers about this collective's successes. They drilled a 4,700-meter-deep well ahead of schedule. The brigade drilled the well at a high rate, successfully overcoming the extremely tricky Maykop sediments, which are fraught with serious complications. New equipment and innovative drilling technology helped. They were developed by specialists at the URB [Exploratory Drilling Administration], headed by Candidate of Technical Sciences R. Veliyev.

After the unstable part of the hole was encased with high-strength pipe, things really got hot, both literally and figuratively, for drillers I. Magerramov, R. Abdullayev, U. Bakhshiyev and M. Yunusov. They had to be extremely careful, while maintaining the drilling rate, to discover the promising Eocene deposits. The excellent qualifications of the brigade members made their achievement possible. They prepared an excellent drilling mud using chemical additives. They used it skillfully, trying not to plug cracks in the formation from which the oil was supposed to flow.

At present, the collective of the Dzarlinskiy URB is accelerating the pace in the competition to fulfill the tasks of the five-year plan. They are diligently leading the search for new natural fuel deposits in the southern AzSSR.

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## OIL AND GAS

### YAMBURG GAS FIELD DEVELOPMENT PRAISED

Moscow PRAVDA in Russian 26 Jun 84 p 2

[Article by Academician A. Trofimuk: "The Results of the Search"]

[Text] It is difficult now to imagine the nation's economy without natural gas. It helps man melt metal, grow vegetables and generate electricity. It can wondrously be transformed into a variety of necessary items. Our country is rich in this resource, especially in Western Siberia, where geologists have discovered a number of large underground storehouses. Vyngapur, Medvezhye and Urengoy are deposits that are well known outside of the region. This is the main base that will supply the economy with natural gas. In order to more successfully fulfill the tasks specified in the Energy Program for the future, the geologists have added a new "pearl"--the Yamburg--to this "blue necklace" of the North.

The Yamburg Gas Condensate Field was discovered and evaluated in two stages. First, a widely spaced network of wells--10-15 km apart--was drilled to give geologists a "picture" of the upper level of the underground storehouse. This allowed them to quickly and very efficiently determine the size of the hydrocarbon deposit. However, these data did not give a complete picture of the deposit. Therefore, during the second stage--the search for condensate in lower strata--information was also gathered on the upper levels. The latest achievements of science and technology were used extensively for this.

This work provided a new look at the size not only of the Yamburg, but also other deposits in the Tyumen area. The scientific and technical methods developed and used here are based on the study of materials, not as separate underground storehouses, as is usually done in geological work. Instead, it is based on consolidating all the data for large oil-and-gas-bearing structures into a whole. This is a new approach to solving difficult problems. It is aimed at increasing exploration efficiency. One can obtain reliable data by drilling separate wells using special programs, without increasing the number of wells drilled.

These methods were shown to be highly effective in the development work at Yamburg. A reliable link between the parameters of the productive strata and the geophysical measurements was established by drilling only two wells. This made it possible to make an overall description of practically each

stratum. This was extremely critical in developing the deposit. No other well in the northern Tyumen Oblast was studied in such great detail, even though the wells might have been more closely spaced.

The work of the Tyumen geologists has received high marks from the State Commission on Mineral Reserves of the USSR Council of Ministers. The reserves of the Yamburg Field are greater than those indicated earlier.

This work is of great value for other fields that are presently being evaluated. In the Far North, great savings are obtained for every reduction in the number of wells drilled and the number of exploration operations performed. This not only saves millions of rubles of scarce materials and equipment, but also, very importantly, saves time.

For the discovery and quick pre-production preparation of the Yamburg Gas Condensate Field in the northern Tyumen Oblast, it is very appropriate to nominate the group of production workers and scientists of Glavtyumen'geologiya to the competition for the 1984 State Prize. This group includes such pioneers of this resource-rich area as Yu. Agafonov, Ye. Teplyakov, A. Brekhuntsov, G. Bystrov, A. Tyan and others.

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## OIL AND GAS

### BRIEFS

INNOVATIONS BOOST OIL PRODUCTION--In the first 6 months, an addition 850 tons of oil above plan was produced by the Gryazevaya Sopka Oil Field. This is much greater than the accepted obligations. Careful well operation was part of the reason for this success. The use of innovative equipment and technology for maximum production also contributed. For instance, the specialists of Gipromorneftegaz recommended that well No. 1,011 be equipped with three-stage lift. This did make the installation of the Christmas tree more complicated. However, the expenses were completely justified. The well, operating on the compressor mode, is now producing 12-14 tons of oil per day--double the earlier production. A similar production increase is expected from other wells at the site that are so equipped. Another innovation was tested this year at the site: chromous-hydride treatment of the hole wall zones. This is an effective means of improving the collector properties of formations to provide maximum production. Painstaking work is done on wells that have been out of production for a long time. Five wells were brought back into production by the repair workers. Each one produces 15-20 tons of oil per day. Reviewing their earlier plan, the site workers decided to produce an extra 500 tons of oil above the plan. [By A. Kyazimov] [Excerpts] [Baku VYSHKA in Russian 10 Jul 84 p 1] 12595

DEEP DRILLING AT URENGOY--Novyy Urengoy (Tyumen Oblast)--A new stage has begun in the study of the resources of the Urengoy Gas Condensate Field, located in the polar tundra. An exploratory well, which will eventually reach a depth of over 5,000 meters, was drilled here. At present, the exploration personnel have a good idea of the oil field's structure down to 4,000 meters. High pressure has made further drilling difficult. To overcome this problem, a special well construction technology had to be developed. Special equipment had to be developed and personnel needed to be trained. Preparations have begun for drilling very deep 8,000-meter wells. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 2 Aug 84 p 1] 12595

ARCTIC EXPLORATION VESSELS--Moscow (TASS)--An unusual vessel has docked at Murmansk. It is the floating hotel "Kalevala," built in Finland for the USSR. This vessel will be home for sailors of the Arktikneftegazflot Administration, who are taking part in the search for oil and gas on the continental shelf in the Arctic Ocean. The maximum conveniences have been provided for the exploration workers. There is an excellent sauna and an equipped gymnasium that can be easily converted into a movie theater-concert hall. The on-board power

system provides heat and electricity to all the rooms. There are different types of vessels at the off-shore drilling sites: vessels for geology, installation, transport and now, floating hotels. The geophysical vessel "Professor Polshkov" is now operating in the Arctic. It is to investigate a wide area. Diesel-electric vessels, reinforced for ice conditions, are used for drilling under these difficult conditions. They can maintain the drilling position even in a 6-force storm. They have drilling derricks on their decks that can drill in very deep water. Another class of motor vessel is the installation ship. It is a gigantic floating crane. Several of these giants are operating in the Caspian Sea. They place the large stationary supports for the drilling platforms in position. Increasing the drilling depth is an important direction in the growth of off-shore oil and gas exploration. Special ships aid the geologists in this. The oil and gas exploration fleet is regularly augmented with new vessels equipped with computers, automation systems and telemechanical systems. [By S. Sakhno] [Text] [Moscow VODNIY TRANSPORT in Russian 26 Jul 84 p 3] 12595

KAMCHATKA GAS FIND--Petrovsk-Kamchatskiy--Kamchatka oil and gas exploration workers struck a gash gusher in well No. 8 in the Ichinsky Section. According to preliminary indications, these fields, located in the so-called Kshukskaya Area are of commercial significance. [By V. Komarov] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 19 Jul 84 p 1] 12595

WELL-REPAIR PRODUCTIVITY IMPROVED--Guryev--The underground well-repair brigade of the Dossorneft' Administration, Embanef't' Association, has fulfilled its five-year plan tasks. The brigade is led by M. Anshibayev. The fast pace was made possible because the workers repaired each well at least one-half hour faster than schedules. In addition, the wells that the brigade handled have operated for 15-18 days longer than expected. [By B. Glotov] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 21 Jul 84 p 1] 12595

OIL FIND AT URENGOY--Tyumen Oblast (TASS)--The field crews of the Urengoy Gas Condensate Field have reached an important stage in putting the field into production. For the first time, they have developed an oil pool. Up to now, gas has been produced at Urengoy, although the geologists have continued their exploration work. As the drilling went deeper, new productive formations were discovered. Thus, at a depth of 3,000 meters, an oil pool was discovered next to the central part of the field. The brigade headed by foreman V. Chistyakov was assigned to drill the first well. In all, eight oil wells are to be drilled at Urengoy this year. [Text] [Moscow IZVESTIYA in Russian 5 Jul 84 p 1] 12595

INDUSTRY AUTOMATION MEETING--An all-union meeting on the present state and prospects for the development of process automation in the oil industry was held for several days in Sumgait, at the Scientific Research and Design Institute for Complex Automation of the Oil and Gas Industry. Specialists from many of the country's oil and gas production associations participated, as well as specialists from scientific research institutes, ministries and departments. They discussed problems of developing and implementing modern systems and means of monitoring and control which would help reduce oil losses, reduce manual labor and successfully bring new, difficult-to-develop fields into production. [By M. Gorin] [Text] [Baku VYSHKA in Russian 10 Jul 84 p 2] 12595

OUTSTANDING DRILLING BRIGADE--Ali-Bayramly--The brigade headed by foreman Guseynagi Akundov of the Ali-Bayramly Drilling Association has fulfilled its plan tasks and increased socialist obligations. Since the beginning of the fourth year of this five-year plan, they have completed over 4,000 meters of drilling. This is well over the plan. The use of production time by the brigade has noticeably improved. This indicator is presently 91.4 percent. This success was achieved by strict labor and technological discipline, by efficient use of chemical reagents and other materials and by good care of equipment. The drillers are presently working on the Mishovdag Field. The projected depth of this new well is 1,150 meters. Thanks to smooth and precise work, the brigade has already drilled to a depth of 952 meters. [By A. Babayev] [Text] [Baku VYSHKA in Russian 26 Jul 84 p 1] 12595

STAVROPOL PRODUCTION SURPASSES PLAN--Stavropol--The collective of the Stavropol'neftegaz Association has fulfilled its socialist obligations for above-plan oil production ahead of schedule. Since the start of the year, over 30,000 additional tons of this valuable product have been sent to consumers. Eleven million cubic meters of casinghead gas above plan were produced. The collectives of the Stavropol Oil and Gas Production Administration, the Budennovsk Drilling Administration and the Central Production Supply Base made significant contributions to the success. Labor productivity rose by more than two percent compared with the plan since the beginning of the year. Production cost was reduced by an additional 0.9 percent. [By I. Shlyakhtin] [Excerpts] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 28 Jul 84 p 1] 12595

INTROFORMATION COMBUSTION AUGMENTS COMBUSTION--Baku--A specialized brigade has been created in the Azneft' Association. The brigade uses a new method of oil production--intraformation combustion. The first test area for the new brigade was the Khorasan Oil Field--one of the oldest in the Apsheron area. The fire, which was lit at great depths, helped squeeze out over 20,000 tons of high-quality residual crude. Several other wells of the Leninneft' Oil and Gas Production Administration have been prepared for the intraformation combustion method. This same method is to be widely implemented this year in Ordzhonikidzeneft' and Karadagneft' oil fields. The specialists believe that the intraformation combustion method will be a great help to the Apsheron oil workers as they work to increase production from old oil-producing areas. [By Sh. Medzhidov] [Text] [Moscow IZVESTIYA in Russian 1 Jul 84 p 1] 12595

CSO: 1822/405

## NUCLEAR POWER

### CONSTRUCTION PLANS FOR BALAKOVO AES

Moscow PRAVDA in Russian 18 May 84 p 1

[Article by A. Makasakov, chief of the Saratovgesstroy: "The First Atomic Power Plant for the Volga Region."]

[Text] At the beginning of the year PRAVDA published an outline of the most important construction sites scheduled for slant-up. Among them were the first power generating units of the Balakovo, Zaporozhe and Kalinin atomic power plants and subsequent units of the South-Ukraine, Smolensk and Kola AES's. I shall tell you about the Balakovo Atomic Power Plant, the construction of which was entrusted to our collective.

[Text] The first atomic power plant in the Volga region at Balakovo will consist of several power generating units of a million watts each. Although we have gained substantial experience in the building of the Saratov Hydro-electric Power Plant and land reclamation and chemical enterprises, we now have to resolve many questions anew and to continually improve our industrial base and the organization of the construction process.

On the recommendation of the party obkom we have adopted an integrated system for managing the effectiveness of capital construction developed in Saratov. It includes first and foremost precise measures for party input in the work of the units in the construction process. More than 15,000 workers and specialists are participating in this process, four out of five of whom continually confirm their respected titles of Shockworkers of Communist Labor.

Special emphasis is placed on strengthening the party presence in the work brigades. Integral components of the system are competition based on the "worker relay" principle, mass introduction of the brigade contract and the technical creativity of the workers and engineers.

The construction of the atomic power plant has been declared a shock Komsomol construction project for the country. During holiday periods student groups have been working enthusiastically at the construction site. Also, young men who have finished their military service are willingly joining us. A high

quality dormitory and a new educational complex in which over the recent past many skilled workers have been trained are at their disposal.

At the outset of the construction of this atomic giant the engineers attempted to think everything through, down to the smallest details. They laid all the underground communication lines and they built paved roads in good time. A highway was built to connect the construction site with Balakovo; trolleybus and motorbus routes were opened. At present operations are going on simultaneously at the four power generating units which has made it possible to meet their construction on a flow line basis.

However, not everything that was planned has been successful. As a result, as construction approached the start-up year, it had fallen behind its time schedule. This happened because USSR Gosplan has apportioned capital investment recently in insufficient quantities. To surpass the plans has also been difficult because to do this rolled metal stock, cement and equipment are needed, and who is going to provide them at the end of the year?

Complete technical documentation is provided unsatisfactorily. To date design changes for the start-up power supply unit continue to arrive. Plans for electrical assembly work were provided late. However, the low quality of the documentation is the biggest problem, and this leads to various alterations.

Nevertheless, even under these conditions the work collective has not lowered quality requirements for the construction of the AES. A technical inspectorate successfully functions in the administration. Employees of the central construction laboratory also conduct a monitoring program. People's patrols and members of the Komsomol organization Prozhektor provide much help. When concrete is being poured at the units, inspection posts are manned on a shift basis.

One might say that all chances of defective construction and poor quality work at the construction site are prevented. However, defects do get through from outside sources. It happened that in 1982 the Rustavi Metallurgical Plant delivered 500 tons of special sheet steel intended for use as facing in the transport corridor of the first reactor section. When installation operations began it was determined that a portion of the sheet steel had scaled.

A vexing pause in construction ensued. Fruitless arguments began with the supplier, who refused to acknowledge the defect. Only after the intercession of the procurator of the Georgian SSR was justice restored; the metal was supplied only on the condition that it met quality standards. However, we feel behind the reactor section construction schedule by four months, a lag that subsequently we were only able to cut in half. Ferrous metal enterprises should rethink their approach to filling orders from atomic power plants.

Tens of work collectives participate in the construction of a large scale project. Among them there are many enterprises that manufacture equipment. Strict adherence to contractual obligations is necessary.

In order to put the first power generating unit into operation 65 million rubles worth of work must be completed. The largest share of this lies on the shoulders of the installation workers. Self-criticism requires that it be said that our construction workers have not taken the measures necessary to ensure that operations at the site were carried out in an orderly manner. As a result, the first state--the water treatment shop--was delayed three weeks. The construction workers themselves are responsible for this.

The party organization and all the project workers are now striving to complete 7.5 million rubles worth of work in a month, and in the next 10 million rubles worth. Just such a step is needed to achieve start-up of the first power generating unit at the end of the year. However, it is important that all participants in the construction, from the designer to the equipment manufacturer, precisely fulfill their contractual obligations.

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CSO: 1822/369

## NUCLEAR POWER

### SKODA TO SUPPLY REACTOR COMPONENTS FOR GDR AES

Moscow SOVETSKAYA ROSSIYA in Russian 9 Jun 84 p 3

[Article by B. Aleksandrov: "Skoda-Nord"]

[Text] Groaning heavily the bridge crane slowly raises the huge body of the reactor. The seconds drag endlessly by, but now the whole thing is already under the roof of the shop. I beg your pardon, not all of it. Its lower part hovers right near by; if you jumped, you could touch it with your hand. On the faces of those who are standing around there are smiles, looks of satisfaction, but also, of course, of weariness. It is as if there were still a little flame of doubt flickering in each one of their faces - really, were we able to do this?

Yes, this is the way they "saw off" the latest reactor at the Skoda plant in celebrated Pilsen. The reactor is the heart of a nuclear power plant and as such it is as dear to those who built it over these many months as it is to those who will receive inexpensive energy with its help.

It so happened that the reactor, recorded on film during our stay at Skoda, was destined for the Nord AES which is being built by our German friends. Skoda, which is marking its 125th anniversary, has been designated chief supplier for this power plant and already has shipped much highly sophisticated equipment to the GDR. It was all the more pleasant to hear that on last Wednesday in Prague a new agreement on the supplying of the Nord AES with reactors and turbo-generators was signed. The agreement is to extend six years during which time a powerful industrial center will rise in the northern part of the GDR that will permit the republic to resolve its most difficult energy supply problems; this will be accomplished with the help of the Czech colleagues and their friends from either fraternal countries.

The production of this highly sophisticated equipment for the AES has been facilitated at the Skoda plant by the use of Soviet technical plans and specifications. Our country--a pioneer in the peaceful use of atomic energy--has shared its achievements in the field of nuclear power production generously and in the spirit of fraternal friendship. Soviet specialists, having developed at home the technology for the construction of AES's utilizing the VVER-440 reactor (dozens are in operation in various parts of the USSR), have provided and continue to provide technical support for the construction of similar power plant projects in Bulgaria where the Kozlodui

AES units are operating, in Czechoslovakia where the Yaslovske-Bogunitse AES units are working, in the GDR where the Power Plant imeni Bruno Loishner is providing power and at other sites. Now there are new and more powerful units in the wings. The VVER-1000 reactors will power units in many fraternal countries.

As is known, the accelerated growth of nuclear energy has been planned and is being achieved in the majority of the CEMA countries. This promotes the economy of organic fuels and the preservation and improvement of the environment; it also makes possible the more efficient production of electric power. During this decade total AES capacity in the fraternal countries should reach 100 megawatts. Implementation of the projected program will make it possible to reduce the yearly expenditure of organic fuels by about 200 million tons.

The task is handled by the countries together, thanks to the pooling of their efforts, knowledge and resources. It is to an ever greater extent based on multilateral agreements and contracts. Large scale AES construction projects are brought to reality on this basis. Back in 1979 the Agreement on Multilateral International Specialization of the Production and Reciprocal Deliveries of Equipment for Nuclear Power Plants for the Years 1981-1990 was signed. In its magnitude it is one of the largest agreements within the CEMA context. About 50 enterprises and organizations of the CEMA countries and Yugoslavia are taking part in its implementation.

Today each AES that is built in these countries is an example of the Agreement in practice; it is a mirror of socialist economic integration. Pressurizers, pipe-lines and gate valves from Czechoslovakia, heat exchangers from Poland, equipment for special water treatment from Hungary and equipment for environmental control from Bulgaria have been supplied to the recently opened Rovno AES in the USSR.

And now a new agreement has been signed. Nord like other AES's in the fraternal countries is a creation of this integration. Deliveries are already arriving there from various addresses. Certainly, the main portion of the equipment will be sent from Czechoslovakia. Pilsen, Vitkovitse, Tolmach and Olomouts will consider it an honor to work on such sophisticated units.

As in the past the giant machine tools at the "atomic factory" at Skoda will again go into motion; again the hardening furnaces, puffing with incandescent steam, will have their gates thrown open. Difficult days will pass until the birth of a new reactor. That reactor, like those produced before and after it, will work for socialism, for the strengthening of its might. Yes, only together as friends will we be able to complete these most difficult tasks. As K.U. Chernenko noted at the February Plenum of the CPSU Central Committee, "We can make a great contribution to the cause of peace, progress and the security of the peoples of the world by developing and deepening solidarity and cooperation with countries of the socialist camp in every way possible in all spheres, including, of course, the very important economic sphere."

## NUCLEAR POWER

### BRIEFS

**POWERFUL, SAFE REACTOR DEVELOPED**--The atomic power station for heat supply is capable of replacing more than 300 ordinary boilers and of heating practically an entire city by itself. According to a plan developed at the Scientific Research Institute for Atomic Reactors imeni V.I. Lenin, the station should be located approximately three kilometers from residential districts. Hence the increased demands on its systems. The two 500 megawatt nuclear reactors with which the station is equipped possess enhanced safety features. Instead of the usual two, a third independent heat-exchange circuit is provided for. Here, the water going directly for the heating of buildings is heated to a temperature of 150 degrees without coming in contact with the radioactive elements of the reactor. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 15 Jun 84 p 1] 8750

**NUCLEAR PLANT EQUIPMENT PRODUCTION**--Tallin (TASS)--The Tallin Electro-Technical Plant imeni M.I. Kalinin Association has increased its production of equipment for atomic power plants. As part of an economic experiment being conducted here, the firm has transferred the production of goods outside its area of specialization to another industry enterprise. In the space freed as a result of this transfer, additional production of the plant's main products--equipment for atomic power plants--has been developed. Economic calculations done by enterprise specialists showed that, under the conditions that had developed, it was unprofitable to combine the production of complex and large equipment with the manufacture of comparatively simple units for electric trains. "The transfer of products to another enterprise is a long and complex process," the general director of the association V. Miroshnichenko said. "However, our experience has shown that within an industry, and in the cause of overall success, it is possible to effectively solve even this kind of problem." [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 23 Jun 84 p 1] 8750

**CEMA CONFERENCE ON POWER PLANTS**--(UzTAG)--Problems of the design and construction of high capacity water cooling towers for thermal and atomic power plants for the period 1986-1995 are being discussed at a scientific-technical conference of specialists from the CEMA countries which opened in Tashkent on June 11. Delegations of designers and power plant builders from the GDR, Hungary, Poland, Rumania, the CSSR and the Soviet Union are taking part. Conference participants will discuss the economic and technical aspects of high capacity water cooling tower construction, become acquainted with

Soviet experience in the construction of such towers and also visit the construction site of the Novo-Angrenskiy State Regional Electric Power, where one of the largest water cooling installations in the country will operate. [Text] [Tashkent PRAVDA VOSTOKA in Russian 12 Jun 84 p 2] 8750

OBNINSKAYA AES 30TH ANNIVERSARY--The first industrial atomic power plant in the world was put into operation on June 27, 1954 in the city of Obninsk, Kaluga Oblast. It had a capacity of 5,000 kilowatts. The plant provided current to industry and agriculture in the surrounding areas. The start-up of the Obninskaya AES, despite its modest capacity by today's standards, was an event of huge international importance. The first AES became a symbol of the utilization of the potential of nuclear energy for peaceful purposes. In recent years nuclear power production has developed at very rapid rates. Whereas in 1975 the AES share in the production of electric power in our country was less than 2 per cent, by 1983 it had reached almost 8 percent. The plan for 1984 projects a rise of power production at AES's of 24 percent, to 136.5 billion kilowatt-hours and the introduction of about 6 million kilowatts of new capacity. The utilization of nuclear energy permits us to solve extremely important economic problems: to provide large industrial areas of the country with electric power, where supplies of conventional fuel are limited, as well as to provide power to remote areas or areas with difficult access. The USSR Power Program that has now been developed reflects party and government policy for the establishment of a large scale and highly efficient nuclear energy industry. [Text] [Moscow EKONOMICHESKAYA GAZETA, in Russian No 26, Jun 84 [no page No given]] 8750

HIGH-SPEED TURBINE TESTING COMPLETED--Leningrad--Testing of the first Soviet 1 million kilowatt high-speed turbine for atomic power plants has been successfully completed. The turbine was constructed by the machine builders of the Leningrad Metal Plant. In addition, work collectives of a whole series of industrial enterprises participated in its construction. They ensured the collaborated delivery of items like out-sized blanks for low pressure integral-disk rotors and high-pressure cylinder casings, turbine blades made from special steels and other unique component units. This "first" of a new series--a high-speed turbine with 3,000 revolutions per minute--will be sent to the Rovenskaya [Rovno] AES which is now under construction. [By I. Selivanov] [Text] [Moscow SEL'SKAYA ZHIZN in Russian 1 May 84 p 1] 8750

CSO: 1822/369

## NON-NUCLEAR POWER

### OFFICIAL VIEWS TAJIK SSR HYDRO-POWER DEVELOPMENT

Leningrad LENINGRADSKAYA PRAVDA in Russian 13 May 84 p 1

[Conversation transcribed by Yu. Zimmel', Novosti Press Agency: "Dams in the Pamir."]

[Text] On the Vakhsh River in Tajikistan the foundation of the future Sangtudinskaya GES is being laid. It will be the seventh in a chain of power plants being built here. The chain will generate 9 million kw of power by the year 2000.

G. Koshlakov, deputy chairman of the TaSSR Council of Ministers, spoke about the development of electric power production in the republic and about its future.

On the basis of potential reserves of hydro-electric power resources, this republic, in which there are 570 large and small rivers, occupies second place in the USSR after the RSFSR. Hydro-electric power construction on the Vakhsh, which joining with the Pyandzh forms one of the largest rivers in Central Asia, the Amu-Darya, began 30 years ago with the construction of the Perepadnaya GES. In addition, the Golovnaya and Tsentral'naya GES's were built on the Vakhsh practically parallel with it. Six years ago the Nurekskaya GES was not yet fully operational, but construction of the Rugunskaya GES had commenced. This year the first unit of the Baypazinskaya GES is being prepared for start-up and construction of the Sangtudinskaya GES is beginning.

The first three hydro-electric plants on the Vakhsh were in their own way a test of engineering strengths. Engineering experience was accumulated at these sites, and a construction cadre developed. The total capacity of these GES's does not exceed the capacity of any one of the nine operational units of the Nurekskaya plant, 300,000 kilowatts each. Next year we are planning to raise the Baypazinsky plant to full capacity, 600,000 kilowatts. Such is the potential of each of the Rogunskaya GES units, start-up of the first of which is projected for 1989. Before then, construction of the Sangtudinskaya GES with a projected capacity of 950,000 kilowatts should be in full swing. The Shurobskaya plant with 800,000 kilowatt capacity will complete this chain of plants.

The beginning of the construction of the Nurekskaya GES has provided a reliable electric power base for the establishment of the Yuzhno-Tajik Area Production Complex within which large industrial enterprises like the Tajik Aluminum Plant and the Yavan Electro-chemical Plant have been established. The construction of each of these projects has given rise to the new cities Nurek, Tursunzade and Yavan. Yesterday's cattlemen and farmers are becoming qualified builders, metallurgists, chemists and power engineers.

Development of the hydro-electric power wealth of the Tajik SSR was planned so as to further the subsequent development of industry already operating in the regions concerned and to organize new production in areas where there was no industry. In the selection of specialization for the new large enterprises, preference is given to those industries that establish scientific-technical progress.

Over the last 10 years 17.5 cubic kilometers of water has been provided from the Nurekskaya GES reservoir for the needs of irrigation. Each cubic kilometer, as calculated by specialists, raises agricultural production by 500,000,000 rubles. This, incidentally, has produced a quite rapid pay-back on the hydro-electric plants in the Tajik SSR. The Nurekskaya GES, which has generated more than 60 billion kilowatt-hours of electric power and provided water for agricultural irrigation, has already paid for itself twice.

The Nurekskaya GES has permitted a rise in the electric power availability per worker in the republic's agriculture and a move to stable harvests of its chief crop, now approaching 1,000,000 tons of raw cotton. The plant reservoir, while regulating the flow of the Vakhsk, performs its irrigation role in the Turkmen and Uzbek republics also.

Electricity produced in the Tajik SSR also enters the Energy Ring of Central Asia. This totals 70,000,000 kilowatt-hours per day (by comparison, the Tajik SSR produced 62,100,000 kilowatt-hours for all of 1940). The Energy Program of the USSR, adopted last year, projects the completion of a unified power grid for the country by the end of this century and the connection with it of the power plants of the Tajik SSR.

In this regard, a search for ways to transmit electric power over long distances over mountainous terrain which makes high voltage line construction difficult is being carried on. At present one cannot overestimate the significance of each new hydro-electric power plant in the Pamir, which covers almost half the territory of the republic. For example, this year preliminary operations leading to the construction of a GES with capacity of 24,000 kilowatts on the River Gunt will commence.

Next is the development of the power potential of the Pyandzh. The development thus far accomplished has fixed the capacity of only one of the plants of the new chain, the Dashtidzhumskaya, at about 5 million kilowatts. The development of the Pyandzh resources is being examined together with the utilization of the 16 cubic kilometers of Lake Sarezskoye in the Pamir. By releasing from this lake via the GES chain a replenishable amount of water into the Pyandzh via the Murgab and Bartang and creating there a reservoir, it is possible to achieve the long term regulation of the water flow in the Amu-Darya. The accomplishment of this project would provide abundant, inexpensive electric power and would guarantee irrigation of large fertile areas in the Tajik, Uzbek and Turkmen republics.

## NON-NUCLEAR POWER

### MINERGO OFFICIAL DISCUSSES DNESTR HYDROSYSTEM

Moscow IZVESTIYA in Russian 10 May 84 p 1

[Article by IZVESTIYA staff correspondent N. Baklanov: "The Dnestr Hydro-system."]

[Text] Recently, a new "point," the Dnestr Integrated Hydro-system, appeared on the map of the Unified USSR Power Grid. An IZVESTIYA correspondent asked V. F. Sklyarov, the UkSSR Minister of Power and Electrification, to comment on its significance.

"this integrated hydrosystem is located, as is clear from its name, on the Dnestr, near the village of Novodnestrovsk, Chernovtsy Oblast. The GES power output is 702,000 kilowatts; six hydro-units put out 117,000 kilowatts each. They are all now in operation with operations quality assessments of good and excellent. The rated yearly output of the GES is 8 million kwh."

"Vitaliy Fedorovich, the hydrosystem has yet to produce electric power at its normal yearly rate. What is the cause of this?"

"In the first place, this is a new project and it simply hasn't been able to reach its projected production rates yet. In the second place, the hydrosystem is not operating all the time. It is intended primarily to cover peak loads on the Unified Southern Power Grid, which includes the Ukraine and Moldavia. It also plays a very important role in supplying CEMA countries with electric power as well as serving as a mobile operational reserve for the power grid."

"You talked about 'peak loads.' Would you please say in more detail what 'peak' means in this context?"

"The grid's busiest 'peak hours' are from 7 to 10 in the morning and 7 to 10 in the evening. I'll give you an example: if a popular television program is being broadcast in the republic, the load grows by 2 million kilowatts, which is equal to the power of a large electric power station. At just such times the Dnestr Hydrosystem is brought into the circuit and it takes part of the load on itself. It is this function, covering peak loads, that the Dnestr Hydro-storage Station will serve. Preparatory operations for its construction have already begun."

In speaking about the significance of the hydrosystem one should not fail to note its important role in providing guaranteed water intake from the Dnestr Basin.

## NON-NUCLEAR POWER

### BRIEFS

SHAMKHOR GES' BILLIONTH KWH--Shamkhor, Azerbaijan SSR--Meters at the Shamkhor GES have registered the production of the billionth kwh of electric power since the plant came on line. This milestone was reached 1 month ahead of schedule. The Shamkhor GES, which has a capacity of 380,000 kw, is a control plant in the unified power grid of the Trans-Caucasus region. It provides electric power to the intensively developing western portion of the republic. Water from the Shamkhor Reservoir will irrigate 75,000 hectares of land. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 6 Jul 84 p 1] 8750

MAGADAN GETS POWER UNIT--The third power generating unit of the Kolyma GES has been put under industrial load and has begun to supply current to the Magadan Oblast power grid. With its start-up, construction of the first phase of the first hydro-power plant built in a permafrost area of the USSR has been completed. Neither the harsh cold nor violent flood waters unduly disturbed the builders of the plant. In order to neutralize the influence of the harsh climatic conditions of the north, the stations located beneath the machine room were cut out of rock cliffs on the shore. The Kolyma GES's construction management collective met its socialist obligations for the start-up of the third power unit ahead of schedule. V. Gorokhovik's brigade of fitters and installers distinguished themselves in an outstanding way. With a jewelers accuracy, down to one-hundredth of a millimeter, they set up the turbine and generator, which had a combined weight of about 1,000 tons. [By Yu. Ralin] [Text] [Moscow STROITEL'NAYA GAZETA in Russian 17 Jun 84 p 2] 8750

KOSTROMA GRES MOST ECONOMICAL--Kostroma--Kostroma GRES's 200 billionth kwh of electric power was produced yesterday. Here is an interesting comparison: the Kostroma GRES alone has produced as much electric power since 1969 as was produced by all Soviet power plants during the first 15 years of Soviet rule. Of all power plants of its type, the Kostroma GRES is the most economical. A record low use of fuel relative to plant size has been achieved here. Over the years of plant operation power engineers have saved the country 250,000 tons of fuel oil. Innovations introduced in the industry as a rule are tested for their approval and "pluses and minuses" at the Kostroma GRES and only then receive their "permanent residence" at similar enterprises. Thus, one of the largest experimental power units with a capacity of 1.2 million kwh has been installed and is undergoing "training" at the Kostroma GRES. It has now been put into a planning operation. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 27 May 84 p 1] 8750

TURBINE OPERATING UNDER WATER--Sheksna, Vologda Oblast--The Sheksna GES has generated more than 2 billion kwh of electric power since start-up. It is located within the spillway dam of the Sheksna sluice of the Volgo-Balt Canal. Both the turbine and the generator are hidden in a special capsule, a casing lowered into the flowing water. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 26 May 84 p 1] 8750

URENGOJ GAS REPLACES OIL--Novocheboksarsk, Chuvash ASSR--The laying of a gas pipeline has commenced which will connect the main pipeline Urengoy-Pomary-Uzhgorod that passes through the Chuvash ASSR with the city of Novocheboksarsk. Along this pipeline Urengoy gas will be delivered to Novocheboksarsk Power Plant No 3 which provides heat to this young Volga city. The plant's conversion to gas will help to raise the reliability, stability and the efficiency of the power plant's operations as well as to improve the working conditions of the plant's boksarsk this autumn. In order to speed the work on the line, workers have set up a specialized work brigade of experienced installers. At fixed work stands they have welded all the pipe into long lengths. This will permit them to more effectively manage equipment and people at the construction site. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 22 May 84 p 1] 8750

NEW PLANT FOR HYDRO-COMPLEX--Kharkov--The Dnestr Integrated Hydro-Complex is developing. Already a GES is operating here with a capacity of more than 700,000 kw; it is supplying power to cities in the Ukraine and Moldavia as well as to CEMA countries. At present construction is beginning on the largest hyrdo-storage power plant in the country. Its projected capacity is 2.25 million kw. Units that are able to operate both as turbines and pumps will make it possible to more fully utilize the power resources of the Dnestr. [by A. Vyatkin] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 23 May 84 p 2] 8750

FAR EAST POWER CONSTRUCTION--Khabarovsk--Construction is completed on the main building of TETS-3, one of the largest heat and power plants in the Far East. Workers have now started pouring concrete for the foundation on which the first steam turbine will be mounted. By December the first phase of the TETS will be put into operation. Workers have assured that their work will be fast paced by adopting progressive methods of equipment assembly. With the start-up of TETS-3, Khabarovsk and other industrial centers of the kray where construction is intensive, enterprises are expanding and new residential districts are being built will receive a reliable supply of heat. [TASS] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 26 May 84 p 2] 8750

INSTALLATION AT SURGUT GRES-2--The installation of a 800,000 kw turbo-generator has commenced at Surgut GRES-2. A. Rukavchuk's brigade installed the low pressure cylinder on its foundation. This collective installed all 16 units during the first phase of the construction of the power plant in a high quality manner. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 24, Jun 84 p 3] 8750

PRODUCTION MILESTONE AT UST-ILIMSK GES--The first unit of the Ust-Ilimsk GES has produced 150 billion kwh of electric power since start-up. This hydro-power plant on the Angara has already reliably supplied power to enterprises and construction sites of the region for 10 years. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 22, May 84 p 3] 8750

## PIPELINE CONSTRUCTION

### URENGOY--TSENTR-1 PIPELINE PUMPING STATIONS VISITED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 21 Feb 84 p 1

[Article by M. Umanskiy, Tyumen Oblast: "The Bed of the River of Gas"]

[Text] Every day the Ministry of the Gas Industry's Central Dispatching Administration records 70 million m<sup>3</sup> of "blue fuel" passing through the Urengoy-Pomary-Uzhgorod trans-continental gas export pipeline. Having completed its surge through thousands of kilometers of forests and swamps ahead of schedule at the end of last year, this river of gas is gaining strength with every month that passes.

Our helicopter is flying over Western Siberia. Below lies the taiga, powdered with snow. The pipeline's route is marked by a broad cut that looks as if it had been snipped through the taiga forest by a giant pair of scissors. Seeing how the white band crosses rivers and hills to disappear over the horizon, one feels respect for those who, disregarding all obstacles, built this unique gas transportation artery in an unprecedentedly short period of time. What is happening and how are things going along the route today?

"The main thing right now is to put the compressor stations into operation in the proper sequence and speed up the gas flow to the West," says Ye. Yakovlev, general director of Tyumentransgaz [Tyumen Gas Transport Association]. "In the Tyumen section along there are 15 of them, of which the 7 most important ones are already in operation. The others will go into operation during the first quarter of this year, in strict accordance with the plans. The main pipeline's productivity will reach the planned level of 90-95 million m<sup>3</sup> of gas per day."

One of these powerful compressor stations was built not far from the small city of Ivdel', on the eastern edge of the Urals. What one sees is tall aluminum structures that resemble a real plant placed in the middle of the taiga. Inside there are gigantic machines that are two stories tall. They are the first Soviet-made, series-produced gas-pumping units, and they are rated at 25,000 kW. Three of them are successfully replacing twice as many of the machines of the older design, which reduces installation time and metal consumption considerably. At the same time, the new units are noticeably more economical than their predecessors.

Installers and start-up people are still working in the operations control room. Let us meet one of them, an energetic Frenchman named Jean (Giyen).

Together with our specialists, he is checking the connection between the Soviet turbine and its foreign "framework"--pipelines, automation elements, monitoring and measuring equipment. Jean, despite his youth, can be said to be a veteran of Soviet-French collaboration and he knows Russian quite well. Behind him is experience in introducing the gas-lift method of oil extraction in the Fedorovskoye and Samotlorskoye fields.

"We consider it an honor that your country decided to use the services of our company, because all of the best things that have been accumulated in pipeline construction are focused on the 'gas-pipe' deal," he says.

The question is, how does he rate the level of his business contacts with the Soviet specialists. He points his thumb in the air and says, "Here we have no problems. I long ago ceased to marvel at how many of you know your business very thoroughly and how erudite your engineers and workers are. And I have already become friends with Adjusters Nikolay Gusev and Viktor Mnyakin."

I ask Jean if he knows that Siberian gas has already reached France.

"Of course! In connection with this, I think we can now forget about the mails. It's sufficient just to drop a few lines into the pipe and a couple of days later my relatives in Marseille can fish them out," he jokes.

A few more hours of flying and sparse, swampy forest begins to replace the taiga. Below us is the Verkhnekazymskaya compressor station. But what is this? Instead of gigantic halls, one can barely make out a quintet of neat "little houses" standing in a row. As a matter of fact, what could be a simpler solution than to use jet plane turbines that have outlived their service lives to pump gas? Beyond this simplicity, however, there is a whole set of advantages.

"Take repair," says Shift Engineer A. Chumakov. "For the normal 50-ton units that is a complicated and laborious business: you're working under field conditions, far from the plant. But for the 'little aviators' that problem almost doesn't exist: the entire repair process comes down to replacing the turbine. It's simply rolled out of the shop and a back-up turbine is put in its place. The entire operation takes one working shift."

Incidentally, as yet there has been no need for replacements. After giving an honest account of themselves in the air, these "babies" work flawlessly on the ground.

Not far from the Verkhnekazymskaya station, scattered green, red and light-brown two-story cottages are scattered around, as if placed there by a childish "builder." This is where the station's operators live. On a rink between the houses, little boys are recklessly chasing a puck. In the settlement there is a school, a sports complex, a bakery and a large dining hall.

And again the familiar white cut, which at times disappears entirely in the middle of the treeless, snow-covered tundra. We are approaching the Urengoykoye field. The planners placed the main compressor station closer to the deposit's "crown." Right next to it is a powerful installation for the integrated preparation of the gas, on which "tails" from the wells converge. This solution make it possible to reduce substantially the number of intra-installation pipelines. The construction of the main station is going ahead at full speed, although there is no particular need for it as yet, since the pressure in the Urengoy gas beds is still quite high.

The socialist obligations assumed by the gas industry's workers for 1984, as published in SOTSIALISTICHESKAYA INDUSTRIYA, stipulate putting the line part of the Urengoy--Tsentr-1 main gas pipeline into operation ahead of schedule. Right behind it, the Urengoy--Tsentr-2 line is advancing along the route. The time is not far away when this very large polar storehouse will begin to work at its full capacity.

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## PIPELINE CONSTRUCTION

### PIPELINE CONSTRUCTION PROGRESS IN MARCH DESCRIBED

Moscow EKONOMICHESKAYA GAZETA in Russian No 16, Apr 84, p 2

[Article by V. Voznyak: "On the Pipeline Routes"]

[Text] Construction of the actual pipeline part of the Urengoy--Tsentr-1 gas pipeline is close to completion. As of 1 April, welding of the pipeline was almost complete over its entire length, and more than 2,900 of the total 3,020 km of pipe had been insulated and placed in the trench. The best results for March were achieved by the integrated production line collectives led by R. Gorst (the Kazymtruboprovodstroy trust and V. Chukanov (the Priob'truboprovodstroy trust). The collectives of Glavtruboprovodstroy [Administration of Gas Pipelines Under Construction] (led by I. Mazur) and Glavsibtruboprovodstroy [Main Administration for Construction of Pipelines in Siberia] (P. Shabanov) have finished completely the gas pipeline sections assigned to them.

Right now the primary assignments on this main pipeline are to insure high-quality purging of the pipeline (cleaning of the space inside the pipe), test it at the planned pressure, make the remaining cuts for the cut-off fittings, and connect the pipeline to the compressor stations. Other things that remain to be done are to finish the construction of the system for electrochemical protection of the pipeline against corrosion and complete several other jobs in order to put it into operation. More than 1,000 km of the pipeline have been purged and 430 km have been tested.

The rate of construction of the Urengoy--Tsentr-2 gas pipeline increased daily in March. More than 300 km of pipe were welded into an unbroken line and more than 200 km were insulated and laid in the trench. The daily gas pipeline construction rate reached 13 km. The integrated production line collectives led by the following people distinguished themselves: V. Belyayeva (the welding and assembly trust), A. Buyankin (Mosgazprovodstroy [Moscow Trust for Gas Pipeline Construction], A. Chernyshev (Nefteprovodmontazh), S. Matsko (Vostoknefteprovodstroy) and L. Bratuta (Uralneftegazstroy).

On 1 April, more than 1,500 km of pipe had been welded on the racks and 700 km had been welded into an unbroken line along the pipeline's track. More than 400 km of pipe had been insulated and laid in the trench. The construction of

this main gas transportation line is being carried out at rates that are ahead of the planned assignments that were made.

In March the collectives of builders and assemblers from Minneftegazstroy [Ministry of Construction of Petroleum and Gas Industry Enterprises], USSR Minstroy [Ministry of Construction], USSR Mintyazhstroy [Ministry of Construction of Heavy Industry Enterprises], USSR Minpromstroy [Ministry of Industrial Construction] and USSR Minmontazhspetsstroy [Ministry of Installation and Special Construction Work] intensified their work on the construction of compressor stations for the system of main gas transportation lines. A number of stations are in a high degree of construction readiness and the work that is necessary to put them into operation has begun.

Minneftegazstroy's collectives worked quite well in March on the construction of the Sechenovskiy, Gornozavodskiy, Bobrovskiy and Pelymskiy compression stations, and they will be in operation in the very near future. At the same time, construction has fallen behind schedule on some stations that were to go into operation during the first half of this year. The organizations responsible for this area Priuralneftegazstroy (G. Pichugin, manager), on the Tayezhnyy compressor station, and Severgazstroy (B. Shpak, manager), on the Yagel'nyy station.

At the present time, a sufficient amount of material, technical and labor resources have been concentrated on the compressor stations that are under construction. Success in this matter will depend on the well-organized work of the builders, installers and preparers, as well as a high degree of labor and technological discipline on the part of everyone participating in the construction process.

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## PIPELINE CONSTRUCTION

### NEW, LIGHT THERMAL INSULATION MATERIAL DESCRIBED

Moscow MOSKOVSKAYA PRAVDA in Russian 5 Feb 84 p 1

[Article by N. Lazareva: "The Pipeline Was Clothed in a 'Fur Coat'"]

[Text] In the northern part of Tyumen Oblast, specialists from Moscow's Institute of the Petrochemical and Gas Industry imeni Academician I.M. Gubkin and the All-Union Scientific Research Institute of Drilling Techniques are now conducting an unusual experiment.

Imagine a well in the permafrost zone. On the surface, the thermometer sits at minus 20-40°. Ten meters below, however, in the oil "river," there is steam. The temperature gradient sometimes reaches 150-170°. It is understandable that the pipes have to be clothed in a special "fur coat." Standard cementing solution is not suitable under such extreme conditions. But what if siplast is used as a component?

My first "acquaintance" with this new material siplast took place several years ago at the Institute of Mineralogy, Geochemistry and Crystal Chemistry of Rare Elements. It was difficult to believe immediately that such epithets as universal and unique apply to this light, transparent little brick. However, they became scientifically substantiated as I read two pages of text on which there was a simple list of the those branches of the national economy where siplast might be used.

Let us take two small pieces of siplast and mica and compare their chemical data. As it turns out, according to its composition, siplast is the same as mica, except that the iron, magnesium and a number of other elements in it have been displaced by hydrogen. Finely crushed mica is treated with diluted mineral acids under a small amount of pressure at fairly low temperatures. The new substance, while partially preserving the properties, structure and composition of the original material, acquires new and valuable qualities.

This is how siplast looks through an electron microscope. Between the fibers one can see huge "black holes," or voids. This means that, as a highly porous material, it has exceptionally good thermal insulation properties. Add siplast to raw rubber, and the finished rubber's quality is not worse, but three times better. And what an excellent construction material lightened concrete is. A panel that is several times thinner than normal will also be able to handle its

basic task, which is to retain heat. Articles made of siplast or with the addition of siplast for shipbuilding, refrigeration machinery building and the chemical industry would make items now being used stronger, lighter, more durable and cheaper. For several years after its origination, however, there was an increase only in the number of laboratory experiments with this new material.

Essentially, the work being done in northern Tyumen Oblast is the first practical experiment. This is what the group's leader, who is the deputy prorektor of the Institute of the Petrochemical and Gas Industry imeni Academician I.M. Gubkin, has to say: "We proposed to the oil workers that we 'wrap up' their wells with this unusual material. Siplast is mixed into the mineralized tamponage solution, which is standard cement with a number of special additives. What results is a material capable of protecting pipes against 'intemperate' outside temperatures. In the future, we are planning to continue our work in Aktyubinsk. True, there we will be faced with another problem, which is to use the new material as an 'insulating wall' between metal and soil containing a large amount of harmful salts. However, experiments--no matter how successful they are--are only experiments, and they still do not solve the fundamentally important problem, which is the industrial production of siplast."

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## PIPELINE CONSTRUCTION

### COMPLETION OF URENGOY--TSENTR-1 GAS PIPELINE NOTED

Moscow IZVESTIYA in Russian 30 May 84 p 2

[Article by V. Zimon, correspondent, Minneftegazstroy Press Center: "A New Bed for a River of Gas"]

[Text] The basic line work for the construction of the Urengoy--Tsentral gas transport system has been completed. Minneftegazstroy's [Ministry of Construction of Petroleum and Gas Industry Enterprises] collectives finished working along the route's more than 3,000 km half a year ahead of the planned date, and their work was of high quality.

Reports from the pipeline arrive at Minneftegazstroy's Main Dispatching Administration every 5 minutes. There are 200 meters to go...100...and then the dispatching service's chief engineer, Aleksandr Khor'ko, reports: the last joint has been welded!

Thus, the laying of the fifth segment of the largest Western Siberia-Tsentral main gas pipeline has been completed. The first to be put into operation--also ahead of schedule and in honor of the 26th CPSU Congress--was the Urengoy-Gryazovets-Moscow gas pipeline. It reached its planned capacity the same year. The line part of the second Urengoy-Petrovsk gas pipeline was finished 3 months ahead of the planned date, and the third section, from Urengoy to Novopskov, was finished 4 months ahead of schedule. Last year the Urengoy-Uzhgorod gas pipeline was finished considerably ahead of the scheduled date.

And now there is a new achievement for the branch's builders. The fifth segment of the Urengoy--Tsentral gas transport system is even longer than the preceding one. From the first days on the job there was widespread development of socialist competition among the line collectives, crews and sections. The pioneers in the competition were line collectives: from the welding and assembly trust, led by Hero of Socialist Labor Valentina Belyayeva, Anatoliy Buyankin's line collective from Mosgazprovodstroy [Moscow Trust for Gas Pipeline Construction], Hero of Socialist Labor Il'sur Shaykhutdinov's collective from the Tatnefteprovodstroy trust and a number of others. Many crews are now working on the Urengoy--Tsentral-2 main line, which is as long as the one preceding it.

The compressor stations on the Urengoy--Tsentral-1 gas pipeline are now being fitted with equipment on a broad front.

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## PIPELINE CONSTRUCTION

### CONSTRUCTION OF GAS PIPELINE, PROCESSING FACILITIES DISCUSSED

Tashkent PRAVDA VOSTOKA in Russian 18 Apr 84 p 2

[Article by Uzbek Agency, Kashka-Darya Oblast, and commentary by I.T. Alyab'yev, chief, Capital Construction Administration, Soyuzuzbekgazprom association: "A New Main Line From an Underground Storehouse"]

[Text] ARTICLE

The first kilometers of the new Shurtan-Mubarek gas pipeline have been laid in the trench. Crews from the Bukharagazpromstroy trust's Second Construction Administration, who developed a competition for a worthy greeting to the 60th anniversary of the formation of the Uzbek SSR and the CP Uzbekistan, assumed the obligation to finish laying the entire 102-km main gas line by the end of this year, although the plan stipulates the construction of a section only 80 km long.

This gas pipeline will pass through hills and the wandering sands of the Karshinskaya Steppe, over fields and canals, and will overcome such a large obstacle as the Kashkadar'ya River.

#### COMMENTARY

The Shurtan field is a large storehouse of natural gas in the Karshinskaya Steppe. Right now, it is already giving the republic's national economy billions of cubic meters of cheap and economical gas. Because of the sulfurous impurities in it, however, Shurtan gas is still used only in industry.

A powerful gas-cleaning installation should go into operation at the Shurtan complex this year. Then the pure fuel will go through the Shurtan-Mubarek pipeline. This will make it possible not only to satisfy Uzbekistan's need for it more fully, but also the needs of our neighboring Central Asian republics and Kazakhstan. New production installations are to be released for operation in Shurtan next year, and this will make it possible to clean all the fuel extracted there. New fields are being readied for exploitation at accelerated rates and construction has begun on the fourth stage of the Mubarek gas-processing plant.

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## PIPELINE CONSTRUCTION

### PIPELINE CONSTRUCTION PROGRESS, PLANS LISTED

Moscow EKONOMICHESKAYA GAZETA in Russian No 24, Jun 84 p 4

[Article by G. Veselkov: "On the Pipeline Routes in May"]

[Text] Having finished the line work on the entire Urengoy--Tsentr-1 gas pipeline ahead of schedule, the builders began to make it ready to go into operation. As of 1 June, more than 2,000 km of this main pipeline's overall 3,020 km length had already been tested and almost 855 km were in use.

As is known, the builders' collectives from Glavsibtruboprovodstroy [Main Administration for Construction of Pipelines in Siberia], Glavvostoktruboprovodstroy [Main Administration for Pipeline Construction in the Eastern Regions] and Glavtruboprovodstroy [Administration of Gas Pipelines Under Construction] are competing to turn over the entire pipeline for regular operation in the first half of this year. Thus, June is the special start-up month.

Construction is being speeded up on the sixth Urengoy--Tsentr-2 gas pipeline. It is the last one planned for this five-year plan and is scheduled to go into operation in 1985. About 3,000 km of pipe have already been laid, of which 997 km have been welded into an unbroken line and 700 km have been insulated.

In May the best results on this pipeline were achieved by the integrated production line collectives led by N. Yevdokimov (the Lengazspetsstroy trust), V. Markov (the Shchekingazstroy trust) and A. Krokhmalev (the Soyuzgazspetsstroy trust). By a decree of Minneftegazstroy's [Ministry of Construction of Petroleum and Gas Industry Enterprises] board and the branch trade union's Central Committee, these collectives are recognized as winners in the socialist competition and have been awarded monetary prizes.

A great deal of intense work is being done for the simultaneous construction of compressor stations on the Urengoy-Pomary-Uzhgorod and Urengoy--Tsentr-1 gas pipelines. On the main export line, 21 of 40 stations are in operation and, according to the plan, 18 more should go into operation in June and 1 in September.

On the Urengoy--Tsentr-1 gas pipeline, 5 of 29 compressor stations should go into operation in June. In order to carry out this assignment, the builders

and the client--Mingazprom [Ministry of the Gas Industry]--need to implement energetic measures to finish furnishing the equipment and materials for the stations that are being built and improve the organization of labor on these projects so as to insure unconditional fulfillment of the plan.

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GENERAL

CZECH DEPUTY MINISTER I. PAR MEETS AZERBAIJANI PETROCHEMISTS

Moscow FINANSY SSSR in Russian No 5, May 84 pp 12-15

[Article: "Cooperation of Petrochemists"]

[Text] "We are greatly interested in getting to know more about our Azerbaijani friends' experience with the technical reequipping of petrochemical and oil-refining enterprises and the development and use of modern high-efficiency technological processes of natural fuel refining". The Deputy Minister of Industry of the Czech Socialist Republic, Iosif Par, declared the above to this AZERINFORM correspondent. He heads a group of colleagues from this ministry who are in the Soviet Union at the invitation of Minneftekhimprom USSR.

"During the 20 plus years which have passed since my first visit to Baku," noted I. Par, "I became convinced of the extent of the impressive changes that have taken place in Soviet Azerbaijan, and how vigorously its industry is developing. The modernization of the petrochemical plants and oil refineries is especially impressive, as they are fitted out with such powerful equipment as the ELOU AVT [Electrical oil desalting plant] and catalytic reforming. By the way, similar installations are operating in our country, too, and it would be advisable to organize close collaboration between our corresponding enterprises, and to make more efficient use of them."

Our guest highly esteemed the achievements of Azerbaijani petrochemistry, and its role in the development of this branch of industry in Czechoslovakia. He made special mention of the successes of Azerbaijani scientists, i.e. the petrochemists whose work is widely known abroad.

I. Par has visited the AzSSR Ministry of the Petroleum Refining and Petrochemical Industry, the NBNZ [Novobakinskiy Oil Processing Plant] imeni Vladimir Il'icha, the VNIIolefin Institute, observed the petrochemical processes of the republic's Academy of Science and has taken a trip to the Khachmasskiy Rayon.

The guests were received by S. B. Tatliyev, first deputy chairman of the AzSSR Council of Ministers.

The guests from the ChSSR depart for Moscow on 6 July.

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## GENERAL

### MEASURES FOR ECONOMIZING PETROLEUM PRODUCTS DISCUSSED

Moscow FINANSY SSSR in Russian No 5, May 84 pp 12-15

[Article by V. Ye. Orlov, director of the Minfin USSR Heavy Industry Financing Administration "Increasing Controls of Petroleum Products Use"]

[Text] The need to take measures which would insure the efficient utilization of petroleum products in the country's Power Plan was emphasized in the decisions of the 26th Party Congress and subsequent CPSU Central Committee Plenums.

The indicated decisions, and also resolution No 759, 1983, of the CPSU Central Committee and the USSR Council of Ministers "Increasing Motor Transport Effectiveness, Intensifying the Struggle Against Write-ups When Cargo Is Shipped via Truck and Insuring the Preservation of Fuels and Lubricants", commit the Ministries and departments of the USSR and the Union Republics' Councils of Ministers to do everything necessary to introduce proper order in the use of petroleum products.

A vital role is played here by the USSR National Committee for Supplying Petroleum Products, which is charged with keeping an account of in-country reserves, control of the efficient and economic use of these reserves independent of departmental subordination of the consumer, and an examination of the causes of loss and adoption of necessary preventive measures.

In the Goskomnefteprodukt system, the number of accounting checks of petroleum products, for the first half of 1983 showed a 34 percent increase over the same period in 1982. The number of scheduled and unscheduled checks of AZS's (filling stations) also increased: there were 67 thousand checks in the RSFSR in 1982, and 31,400 in the first half of 1983. During these inspections, personal coupon stubs corresponding to 876,000 and 273,400 liters of fuel were seized from individual automobile owners. Cases of responsible parties being called to disciplinary and material account for violations and derelictions at their jobs increased.

Some reduction in losses of commodity stocks due to waste was obtained: they show up as R8.9 million for 9 months of 1982 and R8.5 million for the same period in 1983.

In spite of all this it must be admitted that efforts of ministries and departments to introduce proper order in accounting and control of petroleum product consumption achieved only limited success. This is not in accordance with present-day requirements. Data from the inspections carried out by finance agencies and workers of the central staff of Minfin USSR prove this.

The most characteristic faults, repeated from year to year in the organization of accounting and control are: sequence violations of order in accounting for fuel and lubricants and coupons, late inventories, disorganized recording of shortages and losses etc.

Thus, monthly petroleum product inventories are not carried out in the majority of petroleum-marketing organizations, though this is stipulated. A bookkeeping and accounting situation which makes it impossible to control the preservation of petroleum products creates conditions which promote misappropriations and abuses. As a result, in 1982, shortages of petroleum products at the Krasnodar and Tuapsin bulk plant petroleum depots amounted to 11.3 thousand r.; at the Taldy-Kurgan Bulk Plant Petroleum Depot coupon shortages amounted to 11.9 thousand rubles and 9.3 thousand rubles at the Chimkent Bulk Plant Petroleum Depot service stations.

As the result of an inspection at the Gomel Bulk Plant in November, 1983, a petroleum product surplus of 48.5 tons of petroleum products have been discovered and credited in all, including 28.4 tons of gasoline and 36.7 tons of diesel fuel. An unaccounted-for supply of gasoline showed up at the Zugdin GSSR facility and its filling stations in the first half of 1983 because it was written off as having been distributed via organizations' coupons.

Inspection data show that storage and use of petroleum products have not yet been put in proper order by the enterprises and organizations of the various sectors of the national economy.

In the individual organizations within the jurisdiction of Goskomnefteprodukt, the channels for squandering fuel have not been closed. In a number of cases the bulk petroleum stores departments are in an unsatisfactory condition. The storage tanks are not fitted out with full complements of equipment, nor are reference height markings indicated on them, and their instrumentation is out of order.

The work of improving resource management discipline is not being carried out at the proper level, and this is corroborated by the data on the aggregate value of the state coupons which have gone unused by consumers: 156 million rubles worth in 1979, 286 million rubles worth in 1982, and in 1983 approximately 400 million rubles worth.

Like before, organizations, they are allocating stocks which exceed the real demand. For example, in 1982 the Zhgunskiy Sovkhoz in the Dobruzh Rayon of

the Gomel Oblast took out funds of gasoline amounting to 52 tons less than planned (260 tons planned), 258 tons of diesel fuel (220 tons planned) and 352 tons of diesel fuel (750 tons planned), not counting 4 quarter stock allocations. At the same time, the Gomel Boiler Factory of the Buda-Koshelevskiy Rayon in the same oblast took out 46.3 tons of gasoline during nine months of 1983, and 137.4 tons of diesel fuel more than had been allocated for the year.

A number of supply organizations are delivering petroleum products above allotted stocks and quotas were exceeded. In 1982 the Bagruzyn Oil Storage Facility of the Irkutsk Territorial Administration allocated 98 tons of petroleum products over the allotment and 7.8 from otherwise earmarked stocks [bez fondov]. During 9 months in 1983 the Orshanskiy bulk plant allocated over 600 tons of petroleum products above its resources, the Vitebsk bulk plant allocated over 300 tons, and the Novopolotsk plant, over 25 tons.

At times, when cases of unlawful allocation of fuels and lubricants are discovered, nothing is done to prevent future similar violations. In both 1982 and 1983 the Kemerovougol' Production Association unlawfully allocated gasoline and diesel fuel on the side amounting to 171.7 tons during the indicated period. However, the oil-marketing organizations never once imposed legal sanctions against them. In 1983 the Krivorozhskiy Central Concentrating Combine used 1.1 thousand tons of Sel'khoztekhnika's diesel fuel.

In many cases, consumers do not abide by planned rates of consumption of vehicle fuel, and do not meet goals for saving it. Documents confirming the volume of completed freight haulage operations, and consequently the amounts on the receipts for fuel and lubricants, are the ones most often filled with numerous violations, creating conditions for unauthorized add-ons.

Proper measures to more fully satisfy the fuel demands of individual car, motorcycle, motor scooter and outboard motor owners are not being taken; the filling station network is developing poorly, and those stations already in operation have resigned themselves to the abuses. There are only 10 filling stations serving the 19 rayons of Vitebsk Oblast, which is clearly inadequate for refueling, both state and individual transportation. In 12 rayons of the Gomel Oblast there are no public filling stations. From some isolated population centers of these oblasts it is 50 to 100 km to the nearest filling stations. Refueling facilities for the small [automotive] fleet in these oblasts are not yet set up.

These deficiencies can be partially eliminated by more effective use of mobile filling stations. In 1982 the average mobile filling station dispensed only 333 tons of petroleum products, while 600 to 700 tons per year could be sold this way, and in Kemerovo the Petroleum Products Administration the average amount dispensed by one mobile filling station

in the first quarter of 1983 equalled 20 tons, while the average at stations of the Novokuznetsk bulk plant amounted to 0.2 tons.

Presently operating standards for petroleum product losses during storage and transport, and gaging error allow the bulk oil plants to achieve an artificially high saving of petroleum products. For example, at the BSSR Goskomnefteprodukt Vitebsk and Orshanskiy Bulk Oil Storage plants, during 9 months of 1983, with the opportunity to write off 116 tons of petroleum products, 80 tons were actually written off, or 69 percent of the quota.

Total natural loss of petroleum products in 1982 for the Goskomnefteprodukt USSR system amounted to 181,900 tons, or 71 percent of the quota, and at the same time petroleum product surpluses reached 104,500 tons, almost a five-fold shortage increase. All this proves the extreme need to review these norms.

Individual motorists continue to use gasoline from the state fund, in connection with which marketable stocks are not used up. In the Vitebsk Oblast the plan for realizing commercial assets for 1982 was only 72 percent fulfilled, and only 88 percent fulfilled for nine months of 1983, and in this connection, what was left of the commercial assets were illegally turned over to state enterprises and organizations. In that very same Vitebsk Oblast only 35 percent of planned marketable resources were disposed by Oblpotrebsoyuz in 1982 and during 9 months of 1983, and less than that--13 percent--were disposed in Gomel Oblast during 10 months of 1983; the leftover gasoline was used for personal needs.

Shortcomings in petroleum product accounting procedures, inefficient control of consumption and a compromising attitude toward registration of freight haulage volume create conditions for the misappropriation of motor vehicle fuel. Almost 3 thousand liters of misappropriated gasoline were discovered by spot check in 1983 in garage cooperatives of Vitebsk Oblast.

Data from inspections show that coal, power, oil-refining and petrochemical, oil, lumber, cellulose-paper and wood-processing industry enterprises, and ferrous and non-ferrous metallurgy, and the construction material industry, do not pay enough attention to problems of increasing efficiency in the operation of departmental motor vehicle transport and the economic consumption of fuels and lubricants.

Within individual ministries, norms for fuel consumption are brought in late to transportation enterprises, and quotas for fuel economy and measures for economizing light petroleum products are often expressed in formal terms.

In USSR Minneftekhimprom, for example, the goal for the careful expenditure of petroleum products to the associations and enterprises for 1983 was not reached, and at many enterprises there are no norms for fuel outlay per unit of completed work.

In a number of cases, separate quotas for fuel outlay are being determined for enterprises, discounting factually arrived-at levels, and in this connection conditions are created for obtaining unsubstantiated savings in fuels and lubricants. Thus, the individual rate of gasoline consumption by motor vehicle transport for the Bashkir Copper and Sulphur Combine of Mintsvetmet USSR for 1982-1983 was set at 270 grams per ton-kilometer (g/tkm), while actual consumption in 1980-1981 was 230 g/tkm. For 11 months in 1983 the actual rate of gasoline consumption amounted to 229 g/tkm.

Increased rates for diesel fuel consumption were established in 1983 by the Ukrruda Republican Production Association of Minchermet UkSSR for the diesel engines of the Krivorozh Central Concentrating Mill Combine's railroad shop. A norm of 33.1 kg was set at the 32.25 kg per 1000 tkm rate of diesel fuel consumption, established in 1982. As a result, diesel fuel savings amounted to 5.3 percent against the plan.

Lowered quotas for economizing light petroleum products in individual Minenergo USSR enterprises were established. These quotas can be surpassed by several times. Thus, careful expenditure of petroleum products by several organizations of the Soyuzenergostroyprom All-Union Industrial Association for 9 months of 1983 exceeded the year's quota by 2 to 8 fold.

Proper use for the rate of fuel and lubricant consumption has not been ensured at all enterprises, bringing about an increase in planned petroleum product demand. So, during operation of portable conveyer-belt loaders at the Bakin Petroleum Refinery imeni 26th CPSU Congress, instead of the approved gasoline consumption rate of 2.9 liters per hour of operation, a norm of 3.4 liters was used in the job authorizations.

There are instances when different rates of fuel consumption are set for the same form of transport. For example, on Komatsu dumptrucks, used at the Severnyy Concentrating Mill of the Minchermet UkSSR Ukkruda Republican Production Association, the rate of diesel fuel consumption for 11 months of 1983 amounted to 569 liters per 100 km at a norm of 573 liters, and at the Krovorozhskiy Central Concentrating Mill Combine of the same association and for the same model dumptrucks the consumption rate amounted to 735 liters at a norm of 870 liters under similar transporting conditions.

The effectiveness of transportation use is lowered to a significant degree, and consequently, so is the fuel saving in the presence of a great number of vehicles concentrated in small unspecialized vehicle industries economies where the rate of fuel consumption is higher. So, at Karagandaugol' Association, the specific rate of gasoline consumption for non-united motor vehicle transport for 9 months of 1983 exceeded four-fold the total rate of gasoline consumption for the association as a whole.

A check at enterprises in a number of ministries showed that a significant number of vehicles continue to be operated with inoperative and unsealed speedometers, and the bulk oil industry is in an extremely unsatisfactory

state. The practice of rewarding careful expenditure of petroleum products is being introduced slowly, and some enterprises have not worked out a position on regarding fuel and power resources economy. At the same time, awarding prizes usually has no substantial effect on petroleum product economy due to the small bonuses awarded. Individual drivers at the Krivorozhskiy Central Concentrating Mill Combine of the Ukrruda Production Association were paid to 10 while making salaries of 250 to 500 rubles per month for economical use of diesel fuel during the 2nd quarter of 1983.

Shortcomings in motor vehicle transport operation and oversights in fuel accounting result in failure to lower light petroleum product consumption rates. The provision of petroleum products depends on efficient resolution of problems of capital construction, material and equipment supply and accounting and control procedures. This is so because economical consumption of those petroleum products that are now in short supply in the national economy is dependent on purposefully putting these ideas into practice.

Further intensification of work on the careful expenditure of petroleum products requires accelerated activity throughout the entire financial system. For this to be done effectively and economy of petroleum products to be promoted, the attention of workers in finance agencies during checks must be focused mainly on problems of:

- timeliness by higher organizations in bringing differentiated norms and goals for economizing petroleum products and fuel to enterprises, observation of these norms and accomplishment of the goals;

- analysis of petroleum product expenditure;

- accounting for the operation of fuel-consuming equipment (how accurately trip tickets and accounting sheets are filled out, goods and transport bills of lading, and the presence of, and working order of speedometers etc.);

- bookkeeping and primary accounting of the movement of petroleum products, with special attention paid to qualitative completion of monthly inventories and the removal of actual surpluses of petroleum products in storage tanks, vehicle tanks, coupons held by drivers, and accuracy of keeping, accounting and issuing of single state coupons to drivers;

- misuse of petroleum products, including the use of diesel fuel rather than coal and gas, to heat industrial and public and residential premises, unlawful sale of petroleum products to other organizations and private parties, and the observation of discipline regarding resources;

- organization of collection and accounting of waste petroleum products;

- use a bonus system for the careful expenditure of petroleum products and an economic penalty for excessive consumption.

By putting these into practice, workers of the financial system will also contribute to fulfilling the status of Resolution No 759, 1983, of the CPSU Central Committee and the USSR Council of Ministers, and will help in carrying out the nation's Energy Program.

## GENERAL

### BRIEFS

PIPELINE FIRE CONTROL AUTOMATED--Lvov--Fire prevention duties will be performed by automation at the Skolevskiy line station of the Druzhba pipeline. Transport of oil is linked to the potential of fires. Therefore, until recently an around-the-clock watch has been maintained at this station by firemen who have now been replaced by a system of sensors which keeps all the supply pipelines under constant control. Should the temperature deviate from a predetermined setting, the sensors will immediately switch on a highly efficient fire extinguishing apparatus. [By A. Avroshko] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 15 Jul 84 p 2] 12659

CONSTRUCTION WORKERS ECONOMIZING RESOURCES--Baku--Workers of the 3rd SMU [Construction and Installation Administration]'s Azneftestroy Trust, who are erecting housing and oil field facilities over almost all of Ashperon, i.e. from Lok-Batan to Surakhany, have already saved R100,000 this year. Beside working ahead of schedule, and erecting an oil workers' residence averaging more than 2800 square meters in the Patamdar settlement, and an oil field facility valued at over 600,000 rubles in the Ordzhonikidzeneft' NGDU (oil and gas recovery administration), and a number of other facilities into operation, the builders have saved 25 tons of cement, 2500 square meters of ruberoid roofing material and 5000 kilowatt hours of electric power. In this connection, labor productivity has shown an increase of 1.2 percent against the plan, and the production cost of construction and installation operations has been reduced by 0.6 percent. This exceeds the socialist obligations, adopted at the beginning of the year, by a wide margin. [By A. Orbelyan, VYSHKA general correspondent] [Text] [Baku VYSHKA in Russian 20 Jul 84 p 1] 12659

HIGH QUALITY GASOLINE OBTAINED--Togliatti (TASS)--Associates of the AN Azerbaijan Institute of Petrochemical Processes have developed a motor vehicle fuel which requires no high-octane additives. It permits a 10 percent reduction in the production cost of petroleum refining products. The high-quality AI-93 gasoline was obtained through a two-stage refining of so-called heavy petroleum fractions, using an industrial catalytic agent. Use of purified gasoline eliminates the toxic additives which raise the level of harmful contaminants in exhaust gases. [By N. Chulikhin] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 8 Apr 84 p 2] 12659

SIBERIAN OIL CITY ERECTED--Tyumen (TASS)--Another city of oil workers--Kogalym--is rising in Western Siberia. General construction of a huge tract of residences designed for many thousands of people has begun. The main feature of the housing is its above-average comfort in northern conditions. Six years ago, when the first oil rig showed up in this region, few assumed that construction here would take on such a wide scope. But geologists discovered several deposits right away, and work begun full swing. Workers representing Latvia, Lithuania and Estonia came to the aid of the Siberians, directing their best labor collectives here. The construction of Kogalym is being carried out in complete tracts. Enterprises of the fraternal republics are constructing them, and next year, establishment of an in-house construction facility will begin. It will contain a ferroconcrete products plant, large-panel home construction facilities and an asphalt plant. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 8 Jul 84 p 1] 12659

PAVLODAR GETS COKE CHAMBERS--Volgograd--Four coke chambers, each weighing about 200 tons, were transported from Volgograd to the Pavlodar oil refinery. This task was not one of the easiest: the unwieldy devices make an oversized load, and the railroad will transport them only if they are disassembled. That is why they had to undergo preliminary assembly at the Volgogradneftemash Production Association where they were manufactured. They were then dismantled, and later reassembled again at the purchaser's. To do this, the Volgogradians set up installation affiliates right at the construction projects. Now the construction engineers have finally assembled the chambers in place. Then the fabrication holes were hermetically sealed, and the chambers delivered to the Volga. They were towed afloat to their installation site via the inland waterways and the North Sea route. [By SOTSIALISTICHESKAYA INDUSTRIYA correspondent I. Mordvintsev] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 24 Jul 84 p 2] 12659

GEORGIAN GASIFICATION PROGRAM COMPLETED--Vani, GSSR (TASS)--With the arrival of gas into homes and Vanskiy [Vani] Rayon enterprises, the gasification program for this republic's mountainous regions is complete. Yesterday, for the first time, gas came to the cities and villages located near the city of Vani. These mountain people now have hot water and a convenient household fuel. "Bringing gas to the high mountain villages was not an easy business," said GSSR Goskomitet Gasification Chairman B. Lobzhanidze. "The rights-of-way had to be laid through valleys, forests, and up steep slopes. Gasification of the mountain villages occupies a special place in our work. In a quarter century, the Georgian gas industry has become a significant power production branch. Right now, the relative significance of this energy carrier in the republic's fuel balance equals 46 percent. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 20 Jul 84 p 1] 12659

PARTY OFFICIALS' CONDUCT EXAMINED--As E. Khananov, of the Lisichansk Gorkom, Ukrainian CP reported to the editorial staff, the article under the title "Trial by Conflict" has been examined by the party gorkom. It was admitted that the appointment of V. Andreyev as chief of the Oil Pipeline Administration was a serious mistake. By a decision of the party gorkom buro, V. Andreyev has been expelled from CPSU membership for repeated violations of party and state

discipline, abuses of his official position for mercenary motives and revealed insincerity. The personal affairs of V. Saprykin will be examined after recovery from illness. Participation of party organization secretary V. Yarovoy in picnics and fishing trips has not been established. He has been given a positive reference. However, V. Yarovoy allows himself an oversimplified approach and disordered thinking on some issues. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 20 Jul 84 p 2] 12659

ASTRAKHAN GASIFICATION PROGRESS--Astrakhan (TASS)--Gasification technologists of the Astrakhan Nizhnevolzhskspetsstroy Specialized Construction and Installation Trust are doing shock work. Their success in laying main lines and feeder networks is especially noteworthy. More than five times the assigned length has been laid in just the first quarter. This year the construction workers will complete gasification of the Yenotayevka Rayon Center and a number of other population centers. Soon gas will appear in Kucherganov sovkhos workers' homes. [By A. Golovko, SEL'SKAYA ZHIZN' correspondent] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 26 Jul 84 p 1] 12659

SOVETABAD WATER SUPPLY OPERATIVE--(Ashkhabad)--The Sovetabad gas field in southern Turkmenistan has a reliable supply of water. Powerful water supply installations and many kilometers of pipeline have gone into operation and have brought the water of the Kara Kum Canal here. The water was brought to this field in the process of gas recovery, then to the shift workers' settlement built for operators and construction workers at project construction sites. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 28 Jul 84 p 1] 12659

BLOWN GAS SMELTING IMPROVEMENT--Tula--A pilot-industrial plant for blowing reducing gases into a blast furnace is being assembled at the Tulachermet Association. The gist of this innovation is the fact that in a gaseous medium, carbon burns completely, and the smelting process occurs more intensely. Here, coke consumption per tons of cast iron produced is reduced by 150 kg. On an industry scale, this innovation heralds tremendous savings. According to the schedule, this unique system is slated to go into operation at the end of this year. [By V. Pavlov] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 20 Jul 84 p 2] 12659

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